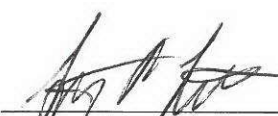


Meeting Minutes Transmittal

**T Plant Complex, Low Level Burial Grounds,
Central Waste Complex, Waste Receiving and Processing
Project Managers Meeting
825 Jadwin / Room 540S
Richland, Washington**

January 28, 2016

The undersigned indicate by their signatures that these meeting minutes reflect the actual occurrences of the above dated Project Managers Meeting. Signatures denote concurrence with the content only and are not intended to imply agreement to any commitments.

 *For Deborah
Singleton*

Project Manager Representative, Ecology

Date: 2/25/2016



Project Manager Representative, RL

Date: 25 Feb 16

Central Waste Complex Admin Record	H6-08
LLBG Administrative Record	H6-08
T Plant Complex Admin Record	H6-08
Waste Receiving and Processing Admin Record	H6-08
J. V. Borghese	H8-43
M. S. Collins	A6-38
B. J. Dixon	T4-09
P. E. Eberlein	H0-57
R. H. Engelmann	H8-45
O. A. Farabee	A6-38
R. D. Hildebrand	A5-11
S. K. Johansen	T1-41
S. Kosjerina	T4-06
R. L. Long Jr.	A6-38
P. W. Martin	H8-45
A. S. Mortensen	T4-04
L. C. Petersen	T4-06
E. R. Skinnarland	H0-57
D. G. Singleton	H0-57

T PLANT/LLBG/CWC/WRAP
Project Managers Meeting Minutes
825 Jadwin/Room 540S/700 Area
Richland, Washington

January 28, 2016

- I. The September 24, 2015, Project Managers Meeting (PMM) Minutes were submitted to the Administrative Record (AR). There were no PMMs held in October or November 2015. The December 10, 2015, PMM minutes were approved today and will be submitted to the AR.
- II. Operational Status
Linda Petersen (CHPRC) provided the operational status as of 1/26/16 (see handout). Ms. Petersen stated that data is being reconciled between the Solid Waste Information Tracking System (SWITS) and the operating record for 750 containers at CWC, and labels are being updated if needed. Stuart Luttrell (Ecology) asked if the 750 containers are identified in both the operating record and SWITS, and if the purpose of reconciliation is to ensure the information is consistent. Ms. Petersen responded that the SWITS records are being reviewed to compare the PIN file to what is in SWITS. Ms. Petersen noted that the PIN file is the official record for each container, and SWITS is the data base that is used on a daily basis. Michael Collins (RL) added that the PIN files are in the Integrated Data Management System (IDMS), and the current effort is to ensure the data bases are consistent. Mr. Collins noted that there is proper labeling on the containers that follow the requirement to state it is hazardous waste, and the containers are being relabeled using newer labels that allow workers to write in information. Mr. Collins stated that the purpose of the relabeling is to ensure that all of the labels are uniform, and it resulted from Ecology inspections and a directive from RL management. Mr. Luttrell asked if 750 is the total number of containers. Mr. Collins responded that 750 containers was the goal for fiscal year 2016, and the effort will continue in future years. Ms. Petersen added that the goal of 750 containers is associated with the reconciliation effort.

Ms. Petersen noted that newly identified roof and floor deficiencies are being tracked at CWC and will be repaired in FY 2016. Deborah Singleton (Ecology) requested a schedule for the floor and roof repairs. Ms. Petersen responded that she would follow up with operations to obtain a current schedule, and she noted that the repairs are dependent upon the weather. Ms. Petersen stated that newly identified box cover deficiencies at CWC will be tracked and repaired in FY 2016. Mr. Luttrell inquired about the box covers. Mr. Collins responded that the box covers are tarps. Stephanie Johansen (CHPRC) added that replacing the tarps is an activity identified in the Agreed Order.

Mr. Collins reported that two reactor compartments are scheduled to arrive in April 2016 for disposal at the Low Level Burial Grounds. Mr. Luttrell inquired about the activity associated with a drill rig on the barge located at the barge slip in north Richland. Ms. Singleton explained that it is associated with implementing a different approach to getting the reactor cores on land.

Ms. Singleton initiated a discussion regarding the budget for WRAP. Ms. Singleton stated that she attended a budget meeting for FY 2017, and that WRAP was not listed as one of the units to receive funding. Ms. Singleton stated that if the decision is made that WRAP will not be receiving waste and that only the shipping and receiving area would be used for TRU and TRUM packages, then RL would need to move forward with closure of WRAP or send a notice to Ecology that the intent is to continue to use WRAP in the future. Ms. Singleton noted that the requirement is called out in the Washington Administrative Code. Ms. Johansen responded that a letter was sent to Ecology within the last year regarding all the dangerous waste management units

(DWMUs). Ms. Johansen stated that all of the SWOC DWMUs were evaluated to determine whether or not they received waste in the last year, and if they hadn't, the future plans were stated in the letter. Ms. Singleton recalled receiving the letter, and stated that it would be beneficial for RL to send a letter regarding the areas in WRAP that will or will not be used. Ms. Singleton noted that during the budget meeting, RL indicated that it was moving closer to not utilizing WRAP as much as it would like. Mr. Collins pointed out that if WRAP is only used for shipping and receiving and it is in a minimum safe mode, it would not equate to zero funding. Ms. Singleton reiterated that WRAP was not on the list, but that CWC and T Plant were listed.

Mr. Collins noted that the one additional drum at CWC (see RCRA-regulated inventory) was associated with waste from the Plutonium Finishing Plant (PFP). Mr. Collins stated that there were some solids sticking to a floor in one of the buildings at PFP, and there was a reaction from a glycerin compound that was used to immobilize the waste before it was scraped up. Mr. Collins stated that the rooms are divided into sections called pans, and there was only one section in the room that had a problem with the reaction (J pan), and the surrounding areas do not appear to have the same problem. Mr. Collins stated that sampling was done, and the non J-pan waste is being accepted because it is transuranic (TRU). Mr. Collins noted that there was a concern with the J-pan waste in light of the Waste Isolation Pilot Plant (WIPP) incident in 2014, and any waste that is a Class D-1, 2 or 3 won't be accepted.

III. Status of Previous Agreements and Commitments

A. There were no previous agreements or commitments to discuss.

IV. New Agreements and Commitments

A. There were no new agreements or commitments established.

V. Near Term Schedules and Ongoing Activities

A. Agreed Order – Implementation

Ms. Johansen stated that there were no items to discuss regarding the AO. Ms. Singleton added that efforts are ongoing with the AO.

B. CAFO

Mr. Collins stated that the FS-1 closure plan was approved. Ms. Johansen referred to a discussion during the previous PMM about the CAFO closure plans, and that Mr. Luttrell had indicated that Ecology was preparing to send RL/CHPRC information about the closure performance standards. Ms. Johansen inquired about the status of the closure performance standards. Mr. Luttrell responded that a table has been drafted, and it has been reviewed internally by several staff. Mr. Luttrell added that since the requirements identified in the table may have impacts across the entire 200 Areas, additional Ecology staff are reviewing the table to ensure the right criteria and levels are included. Mr. Luttrell noted that the management team is reviewing the table today. Ms. Johansen stated that funding is available to close four more sites this year, and expressed a concern that the window has been missed for getting the permit issued for those four sites. Ms. Johansen added that a temporary authorization (TA) would need to be requested, and if the closure performance standards are going to change, an evaluation would be needed. Ms. Johansen pointed out that if agreement could not be reached on any changes to the

closure performance standards, it could hamper the ability to do the four closures this year. Ms. Johansen requested a discussion with Ecology sooner rather than later regarding the closure performance standards.

Ms. Singleton responded that she agreed with Ms. Johansen that a starting set of cleanup standards needs to be in place, but internal agreement has not been reached. Ms. Singleton stated that an effort is under way to reach consensus from some of the other projects within Ecology to generate a set of cleanup standards and a set of contaminants as a starting point for closure. Ms. Singleton noted that if an operable unit has a need for a new set of items to be developed or added specifically for that unit, that could be done, but the goal is to maintain consistency. Ms. Singleton stated that management has indicated it is an acceptable approach, and senior management is reviewing it today. Ms. Singleton added that the goal is to reach agreement by next week.

- C. Hanford Facility RCRA Permit Rev. 9 Update
(See discussion under CAPs).

- D. 8C Updates, Closure Plans, Part B Application

Mr. Collins stated that the goal is to formally transmit the Part B documents for SWOC to Ecology this week. Ms. Johansen added that after a final signature is obtained, the Part B documents could be transmitted today. (See discussion under CAPs).

- E. Conceptual Agreement Packages (CAPs)

Ms. Singleton reported that a Part A CAP workshop was held this week with RL and CHPRC, and the meeting was productive, although the parties did not get through all of the Part A's. Ms. Singleton stated that when RL/CHPRC submit the Part B's, they will be reviewed against the CAPs and the current checklist. Ms. Singleton added that before Ecology can complete its review of the Part B's, a response to all the comments that were submitted on Rev. 9 will need to be prepared. Ms. Singleton noted that most of the comment responses have been prepared, and those responses will need to be ready when Rev. 8C is done because Rev. 8C will meet the requirements of Rev. 9. Rick Engelmann (CHPRC) indicated that four CAPs had been received from Ecology, and asked if Ecology was planning to transmit any more CAPs in the near future. Ms. Singleton responded that she would follow up internally about the status of the next CAP that would be transmitted and send an email to RL/CHPRC. Ms. Singleton indicated that the next CAP would probably be closure since a closure plan for a unit has been approved. Ms. Singleton noted that the last two CAPs will be processing and the waste analysis plan (WAP), which have been identified as the most challenging addendums.

- F. Sludge Storage at T Plant

Ms. Singleton initiated a brief discussion regarding the potential impacts to permitting or any of the DWMUs at T Plant. Ms. Singleton noted that today's presentation on sludge storage at T Plant may answer some of her questions. Ms. Singleton stated that a discussion is needed about potential impacts to any of the DWMUs at T Plant with regard to sludge treatment, sludge receipt and storage. Ms. Singleton cited an example of removing a cover block that would be set down until it is put back in place, and if it would be set in a DMWU area that could not be utilized. Mr. Collins responded that there has been no decision on a treatment process, and there would not be any information in today's presentation regarding that topic. Mr. Collins added that the presentation will cover information regarding the storage movement, such as the cover blocks and their placement, and what equipment will be moved in and out to access the cells. Ms. Singleton indicated that that would be helpful, and to proceed with

cells. Ms. Singleton indicated that that would be helpful, and to proceed with presentation.

Brian Dixon (CHPRC) provided a presentation regarding sludge storage at T Plant, and distributed an accompanying handout. Mr. Dixon noted that the handout had not gone through the formal clearance process, and it would need to be turned in at the close of the presentation. It was agreed that the handout would be attached to today's PMM minutes after being formally cleared. Mr. Dixon pointed out that a presentation on sludge storage at T Plant was given to Ecology and EPA a year ago, and today's presentation is an abbreviated version of what was provided at that time. Mr. Dixon added that there were just a few changes made, and that most of the information would be repetitive from last year's presentation.

Mr. Dixon stated that the first part of today's presentation on sludge storage at T Plant will discuss how the sludge will be safely managed, and the second part will discuss what happens when the sludge gets to T Plant, which should address the questions that Ms. Singleton had raised.

Mr. Dixon noted that there were extensive studies done regarding what was needed for the container design, the management of hydrogen inside the container, and what changes may happen to the sludge during storage, and the studies are referenced in the presentation. Mr. Dixon added that he would not be going through the studies, and that his presentation would be a high-level summary of what the conclusions were.

Mr. Dixon stated that the sludge transportation and storage container (STSC) is a robust, large container, measuring five feet in diameter and ten feet tall. The STSC is designed and engineered to address the specific storage of the sludge. Mr. Collins noted that the STSC could be considered as the next generation of large diameter containers (LDCs) that are holding the North Loadout Pit (NLOP) sludge, except the STSCs do not have the filters on top that the LDCs had issues with. The STSC is a heavy-gauge, stainless steel container with half-inch thick walls and bottom and a three-quarter-inch top, and it is designed as a pressure vessel. The lid design will allow the STSC to be purged with nitrogen and to add water. The STSC is built to be resistant to pitting corrosion, stress corrosion, cracking, uniform corrosion and hydrogen embrittlement. Mr. Dixon pointed out that there are several reference materials noted in the handout which provide the details about the engineering studies on corrosion that were done.

Mr. Dixon stated that hydrogen generation was a concern with the sludge, and the STSC is design to facilitate the hydrogen moving up through the top where it can be vented using a nitrogen purge. A nitrogen purge system is being installed at T Plant, and nitrogen will be used as the inerting gas on the STSCs. Mr. Dixon stated that studies were done, and the results were that the hydrogen would not pose a flammability risk during venting or storage. Mr. Dixon noted that during sludge storage, the fans at T Plant will ensure that it is well below any flammable limits.

Mr. Dixon stated that one of the concerns was regarding what will happen to the sludge while it sits in storage for a fairly long period of time. Studies were done to address potential concerns such as hardening of the sludge, whether the sludge could become more dangerous in some way, and how to keep the sludge moist. Mr. Dixon noted that

one study was done regarding evaporation from the sludge over time, and it was estimated that there would be 12 to 17 percent of initial water loss during the year. Provisions will be established to monitor evaporation and add water when needed.

Studies were conducted to address the freezing potential at T Plant, and the results were that there would be no conditions within T Plant that would cause a freezing issue.

Mr. Dixon stated that literature studies and tests done at PNNL address the issues regarding sludge agglomeration and reactions, and the conclusion is the sludge is unlikely to form high strength agglomerates. Mr. Dixon noted that PNNL has maintained samples that they've monitored for several years to observe what changes are taking place on an annual basis.

Mr. Dixon noted that there is a lot of work going on at K Basins to prepare for sludge retrieval, and today's presentation does not mention those activities. The annex has been built at K Basins where the sludge will be loaded into the STSCs. Mr. Dixon indicated that sludge retrieval is planned to start in a little more than a year from now, and all the preparations are being done, including purchasing the equipment that is needed. The first STSC has been delivered by the contractor who is building them. Ms. Singleton asked if a test mockup was done with the first STSC. Mr. Dixon responded that a mockup was done at the Maintenance and Storage Facility (MASF), and all of the equipment will be tested at MASF, which will give the operators an opportunity to get familiar with the tools and equipment in a nonradioactive environment.

Mr. Dixon stated that the plan is to store up to 30 STSCs at T Plant, although it is believed it will be significantly less than that amount. The original plan was to modify three additional cells at T Plant, but now there will be two additional cells modified, with one cell in reserve if needed. The third cell will not be modified at this time since it is believed that there will be enough storage space with two cells. The NLOP sludge grouting equipment will be removed because it is sitting on top of sections 8 and 9, and the two additional cells will be cleaned out (8R and 14R, with 9L in reserve). Ms. Singleton noted that 30 STSCs would occupy more than two cells. Mr. Dixon responded that the expectation is to receive about 20 STSCs.

Mr. Dixon provided information about what was previously done at T Plant, and noted that these are activities that occurred more than a year ago and not since the last presentation that was given to Ecology and EPA. Mr. Dixon stated that cells 3L, 10L, 13L and 15L were retrofitted with secondary containment and leak detection in 2001, and 10L currently has two LDCs from the NLOP project. Mr. Dixon stated that there were additional changes made in 2001 to support sludge management, including the cask and LDC inerting system, the hoisting and rigging hardware, the capability to add water, and the enhanced closed circuit TV for monitoring and surveillance.

Mr. Dixon provided a description of the process for filling the STSC in the 100K annex and unloading it at T Plant. Mr. Collins noted that when the STSC is filled with sludge in the annex, it will be filled according to rad capacity and not necessarily a volume capacity. Mr. Dixon added that the primary criterion will be weight, and the truck transporting the cask will be weighed at the 100K annex. Mr. Dixon stated that there are no plans to stage the STSC anywhere in the canyon deck at T Plant, and it will be moved

directly into the cell. Mr. Luttrell inquired about the cask venting process. Mr. Collins responded that the air in the main canyon space is drawn down through the cover blocks into the cells, and there is a ventilation header that all of the cells are connected to, which goes through to the filters that are outside at the 291-T stack.

Mr. Dixon stated that during storage, the STSCs will be checked for water loss on an annual basis. Mr. Dixon added that the STSC may be checked more frequently to start with to ensure there were no miscalculations regarding evaporation, or the conditions are different than what were anticipated. Mr. Collins stated that the STSC will be pulled up by the crane, which has a load cell on the hook, and it will be weighed and compared to the previous reading. Ms. Singleton inquired about the proposed storage time at T Plant. Mr. Dixon responded that the length of time has not been determined, but there are milestones about treatment that will require moving forward. Mr. Dixon noted that a location for treatment and a treatment process have not been identified. Mr. Dixon added that the treatment process may be warm water oxidation using a reagent such as Fenton's reagent to facilitate the process.

Mr. Dixon stated that the bottom of the cells is sloped, and a leveling frame will be installed for the secondary containment to be set on so the leak detection can function properly. Mr. Dixon noted that within the secondary containment there will be a structure for the STSCs to sit on, and there will be six positions, with five being used. The sixth position will be reserved for use in the case of a leak, and the STSC would be placed in a container. Ms. Singleton asked if the sixth position will have an empty container already in place. Mr. Dixon responded that the container will be put in place if there is a leak. Mr. Dixon stated that from an environmental regulatory standpoint, the sludge is characterized as PCB remediation waste, and secondary containment and monitoring will be needed. There will also need to be a process in place to handle any leaks that might occur.

Mr. Dixon stated that there will be one water addition container that will sit on the canyon deck, and when water needs to be added to an STSC, the container will be moved with the crane to the cell.

Mr. Dixon stated that there has been a collaborative effort with EPA and Ecology to develop the approach to sludge storage at T Plant. EPA wrote a letter in June 2015, requesting that RL develop an explanation of significant difference (ESD) for the record of decision (ROD) for the K Basins interim remedial action. Mr. Dixon noted that the ROD was first issued in 1999, and there was an amendment in 2005 that provided for the treatment and lag storage. The ESD specifically identifies T Plant and the specific cells as part of the CERCLA action for 100K. The ESD also describes how the sludge will be stored at T Plant in compliance with the PCB remediation waste rules. Mr. Dixon stated that EPA provided comments on the ESD, which RL is in the process of incorporating. Mr. Dixon stated that a 30-day TPA pre-notice of public review was sent out late summer, early fall 2015, and it has been long enough that another 30-day pre-notice will be sent out in the next two weeks. A public review will be held 30 days after the pre-notice is sent out. Mr. Dixon noted that a public review is not usually required for ESDs, but the decision was made to ensure that the public had the opportunity to comment on the longer term storage at T Plant.

Mr. Dixon stated that Ecology sent RL a letter stating that the modifications planned for T Plant are not considered changes that would require a permit modification request, and that RL could proceed. Mr. Dixon noted that there was a very specific list of modifications to T Plant, and the list is still valid, with no modifications added to the list.

Ms. Singleton indicated that the presentation covered the concerns she expressed regarding any impacts to surrounding DWMUs. Ms. Singleton inquired about the time frame for removing the cover block and bringing in the cask and placing it in the cell. Mr. Dixon responded that it would occur within a relatively short period of time. Mr. Collins noted that when the LDCs were placed in the cells, the cover blocks were removed in the morning or the previous day, and the movement from the truck and into a cell and replacing the cover block occurred in one day. Mr. Collins stated that placement of the STSCs would not impact the dangerous waste management activities at T Plant, other than temporarily limiting access to a cell while a cover block was sitting on top of a cell. Mr. Collins added that it would not affect the activity in the cell or on the canyon deck. Mr. Collins noted that the deck is permitted, and there is flexibility to move the permacons, if needed.

- VI. Approved Changes Signed off in Accordance with TPA Section 12.2
A. There were no approved changes identified.

- VII. General Discussion
A. There were no topics for general discussion.

VIII. Actions

Unit	Description of Action	Status	Date
T-Plant – Sludge Storage	Mr. Collins to set up a presentation by the K Basin Operations on sludge storage at T-Plant during the October 22, 2015 PMM Meeting.	New	9/24/15
		Presentation will be given at the 1/28/16 PMM	12/10/15
		Presentation was given during the 1/28/16 PMM. This action is closed.	1/28/16

- IX. Documents for Submittal to the Administrative Record.
A. The meeting minutes from December 10, 2015, PMM were identified for submittal to the AR. The presentation on sludge at T Plant will be included with today's PMM minutes for submittal to the AR.
- X. Next Project Managers Meeting
A. The next PMM was scheduled for February 25, 2016.

Safe Management of KW Basin Sludge at T Plant

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788



P.O. Box 1600
Richland, Washington 99352

Safe Management of KW Basin Sludge at T Plant

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CH2M HILL Plateau Remediation Company

Date Published
January 2016

To be Presented at
No conference - Routine Meeting Only

DOE/RL
Richland, WA

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APPROVED

By Ashley Jenkins at 10:40 am, Feb 24, 2016

Release Approval

Date

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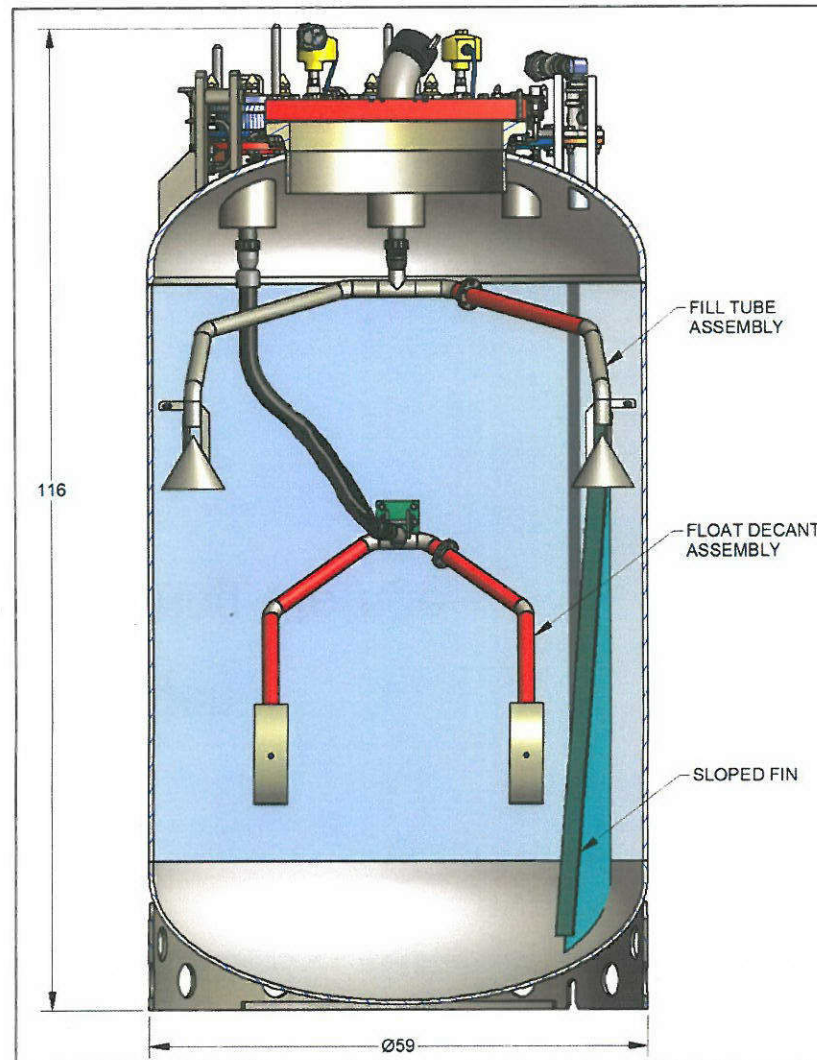
Safe Management of KW Basin Sludge at T Plant

January 28, 2016

Factors and Controls for Safe Management

- Container Design
- Management of Hydrogen
- Chemical Changes During Storage

Sludge Transportation and Storage Container



CP-59725-VA Rev. 0

Sludge Transportation and Storage Container

- The sludge will be packaged in specially designed stainless steel (304/304L) containers with ½ inch thick walls and bottom and a ¾ inch top head.
- Overall height of the STSC is 120 in., including the lower support skirt, top-mounted processing flanges, and head-mounted lifting lugs. The outer diameter of the STSC is 59 inches.
- The STSC is designed as a Boiler and Pressure Vessel Code , American Society for Mechanical Engineers Section VIII, Division I.
- The STSC has a design pressure rating of 150 lb/in² gauge and full vacuum. The STSC serves as a processing vessel to receive sludge and a storage vessel at T Plant.
- The STSC has 8 penetrations in the elliptical head , these ports are used for sludge transfer, decanting, the Overfill Retrieval Tool, level-monitoring instrumentation, spare, ventilation, and purging & venting nozzles.

STSC Corrosion Assessment

Vista Engineering prepared STSC corrosion assessment

- Sludge characterization data
- STSC design specification
- T Plant storage conditions
- Up to 30 years storage duration

Types of corrosion evaluated:

- Pitting Corrosion
- Stress Corrosion Cracking (SCC)
- Uniform Corrosion
- Hydrogen Embrittlement

Conclusions:

- No active mitigation measures are necessary
- Risk of pitting and hydrogen embrittlement deemed low
- Applied loads are not expected to be enough to generate SCC
- 304/304L stainless steel is the recommended material for construction of the STSCs

Reference: PRC-STP-00047, rev. 0, July 2009, *STSC Corrosion Assessment*

Hydrogen Generation

- Design of the STSC mitigates trapping of hydrogen
- Use of a nitrogen purge after filling STSC minimizes hazard during transportation, venting, and nitrogen purging at T Plant
- Studies indicate that hydrogen does not pose a flammability risk during venting or storage
- During storage with T Plant fans running peak H₂ concentration in the T Plant cell is <0.1% and peak H₂ concentration in the STSC is max. 1.1%

References:

PRC-STP-00241, rev. 4, December 2014, *Sludge Treatment Project – Engineered Container Retrieval and Transfer System - Thermal and Gas Analyses for Sludge Transport and Storage Container (STSC) Storage at T Plant*

PRC-STP-00893-VOL3, *Thermal and Gas Generation Analyses for Sludge Treatment Project - Engineered Container Retrieval and Transport System: Volume 3 (FAI/14-0113, revision 1), Thermal and Gas Analyses for Sludge Transportation and T Plant Storage*, by R. A. Apthorpe and J. P. Burelbach, Fauske and Associates LLC, Chicago, Illinois

PRC-STP-00908, rev. 0, October 2014, *Analysis of Cask Venting, Cask Purging, and STSC Purging at T Plant, FAI/14-0114*, by J. P. Burelbach and R. A. Apthorpe, Fauske and Associates LLC

Physical and Chemical Changes during Storage

- Water Loss Rate from STSC during Storage (Evaporation from the pool surface in the STSC, Consumption by the uranium metal reaction with water, Vapor stripping by hydrogen bubbles)
 - 12% to 17% of the initial water inventory lost during one year
- Freezing Potential for Sludge in STSC
 - Based on the historical temperature conditions, it is unlikely for the sludge and liquid in an STSC to freeze during storage at T Plant
- Potential for sludge agglomeration and reactions
 - Sludge is unlikely to form high strength agglomerates (based on Literature Review and Sludge Samples Observations, Uraninite (UO_2) Oxidation to Metaschoepite ($\text{UO}_3 \cdot 2\text{H}_2\text{O}$) Test, Long-term Monitoring of Sludge Samples

Reference: PRC-STP-00579, revision 1, April 2015, Sludge Treatment Project Engineered Container Retrieval and Transfer System: Status Report for Long Term Monitoring of K Basin Sludge Samples

Sludge Retrieval Project Scope at T Plant

- Store up to 30 Sludge Transportation and Storage Containers (STSC) with K Basin sludge at T Plant.
 - Storage of STSC is similar to previous campaign conducted at T Plant to store Large Diameter Containers (LDC's).
 - Remove the North Load Out Pit (NLOP) sludge grouting equipment currently installed on top of sections 8 and 9 on the canyon deck.
 - Clean out and modify 2 additional cells at T Plant to store K Basin sludge (cells 8R & 14R).

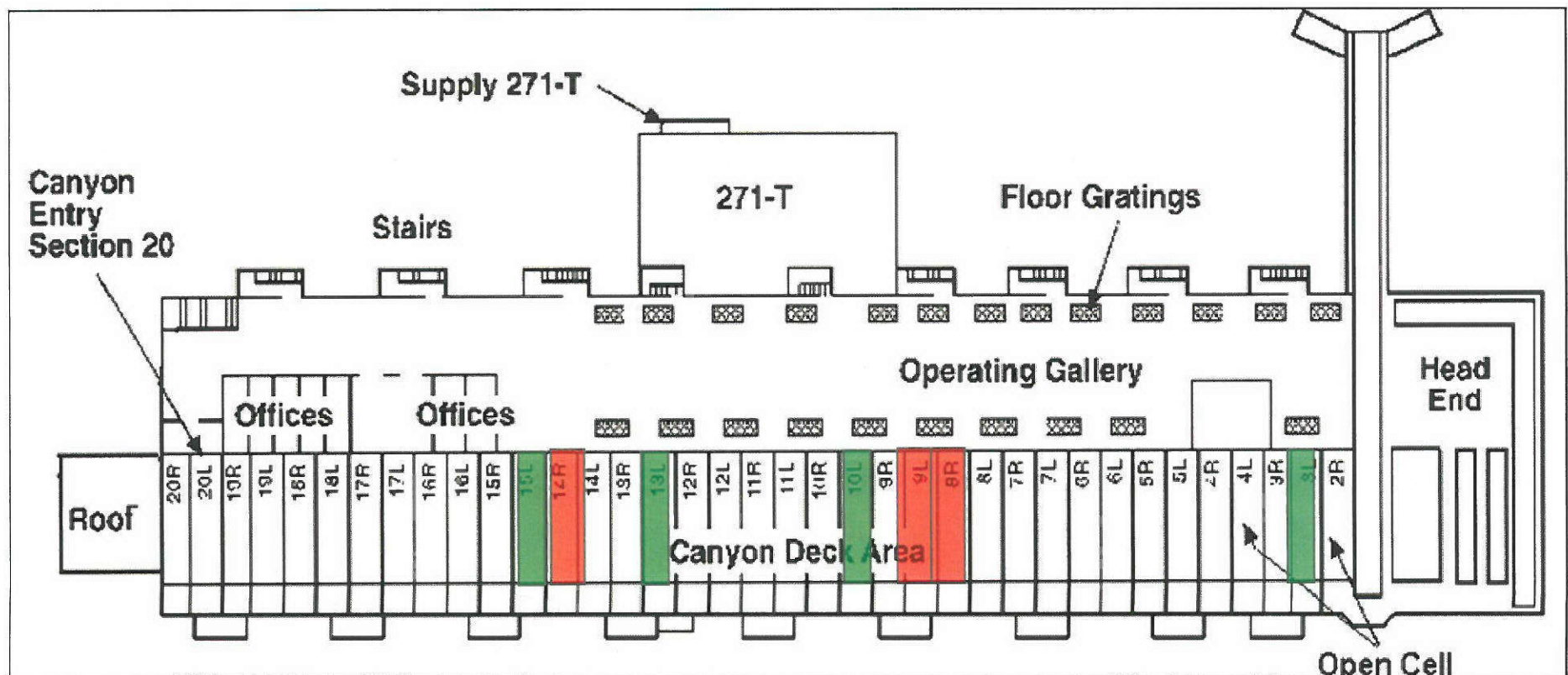
Previous Work at T Plant

- Cells 3L, 10L, 13L, and 15L were retrofitted in 2001 to provide secondary containment and leak detection
- Cell 10L is currently storing 2 LDCs from the NLOP project
- Other changes made in 2001 to support NLOP sludge management:
- Cask/LDC inert gas system
- Hoisting and rigging hardware
- Capability for make-up water addition
- Enhanced CCTV for remote monitoring and surveillance

Process Description

- Stage cask transport trailer with STSC in tunnel and prep for off-loading STSC including nitrogen purge of cask.
- Cask is vented into canyon through engineered vent to decrease internal pressure. Cask is purged with nitrogen into canyon through engineered vent to decrease hydrogen concentration.
- Canyon crane removes cask lid. A nitrogen purge is performed on the STSC with the purge discharged into canyon through engineered vent. The crane places the STSC in the canyon cell and replaces the cover blocks.
- Reload cask with empty STSC, replace cask lid, and return the cask transport trailer to K Basin
- Periodically during storage, perform a surveillance and obtain container weight to determine water loss due to evaporation. (Add make-up water as required to replenish water loss)

T Plant Canyon Storage Cell Configuration



Cells 3L, 10L, 13L, 15L modified for LDC sludge storage

Cells 8R, 9L, 14R will be cleaned out and available for modification

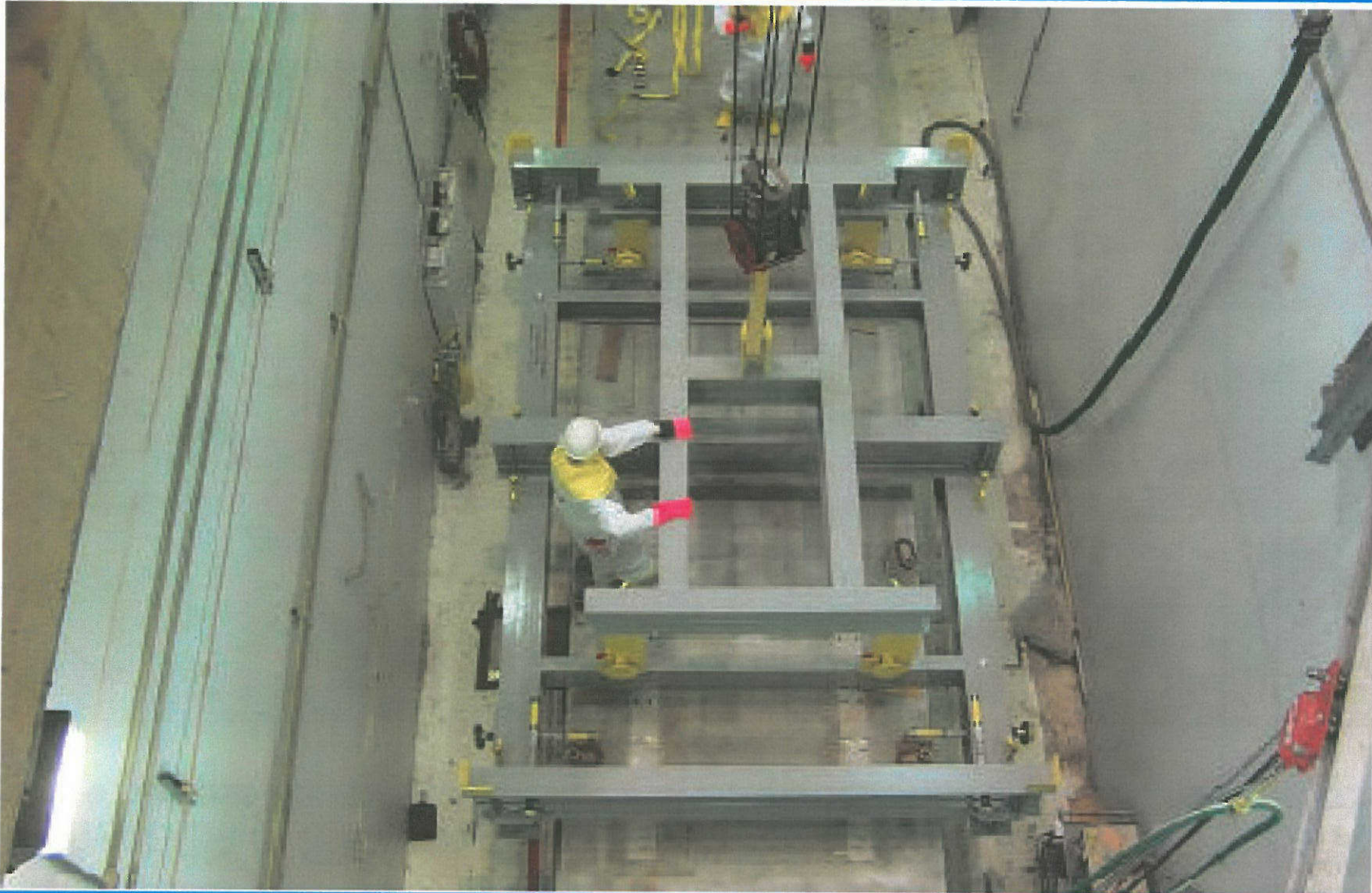
T Plant Canyon Deck



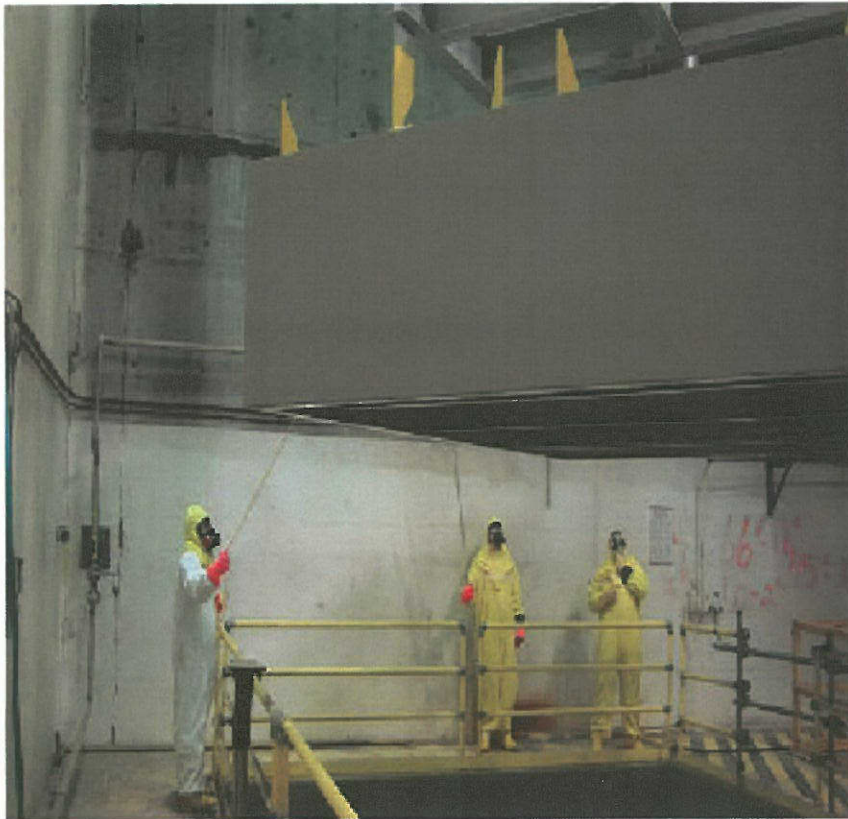
Hoisting LDC from Cask in T Plant Tunnel



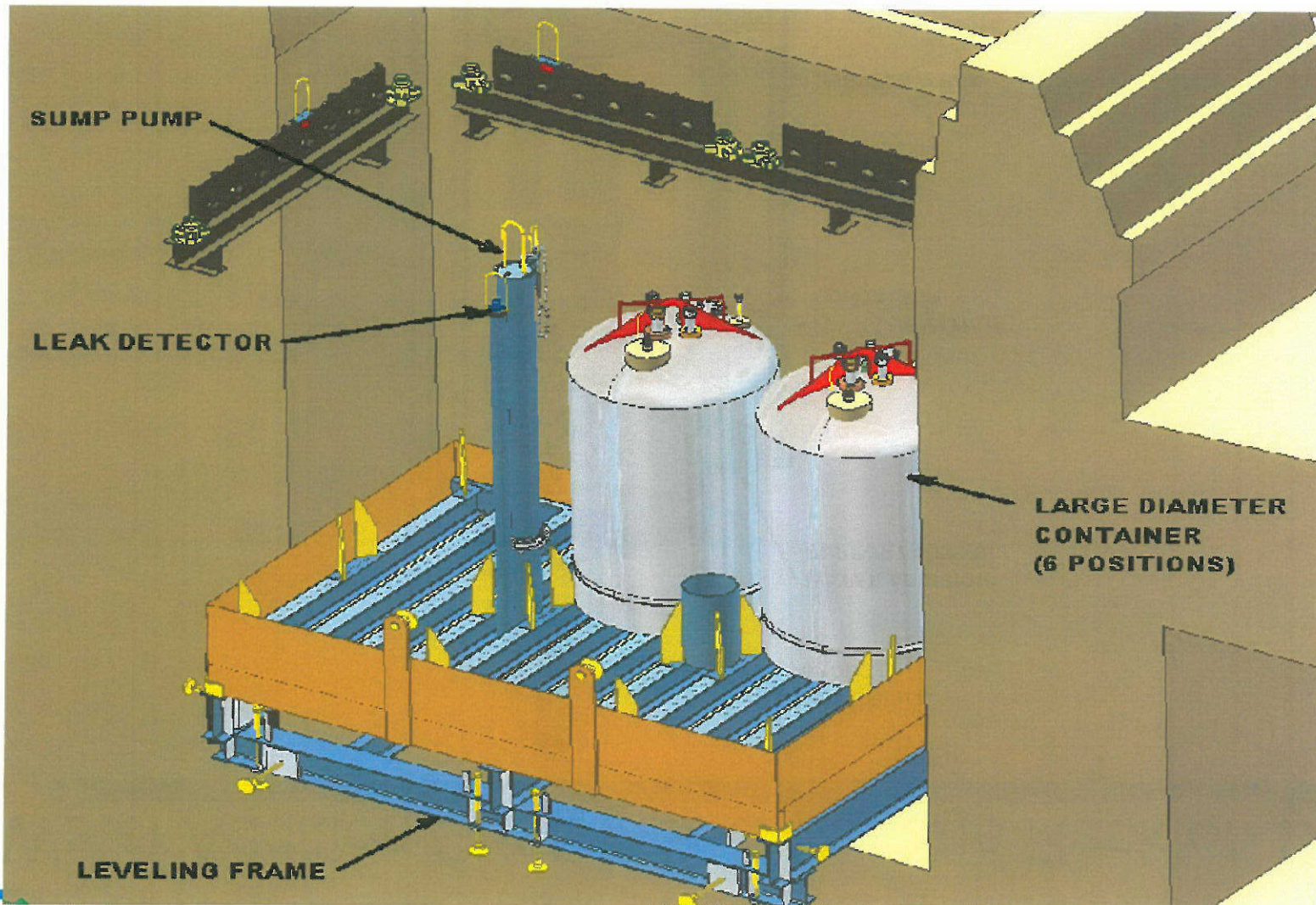
Leveling Frame



Installing Secondary Containment (10.5' X15.8' X3')

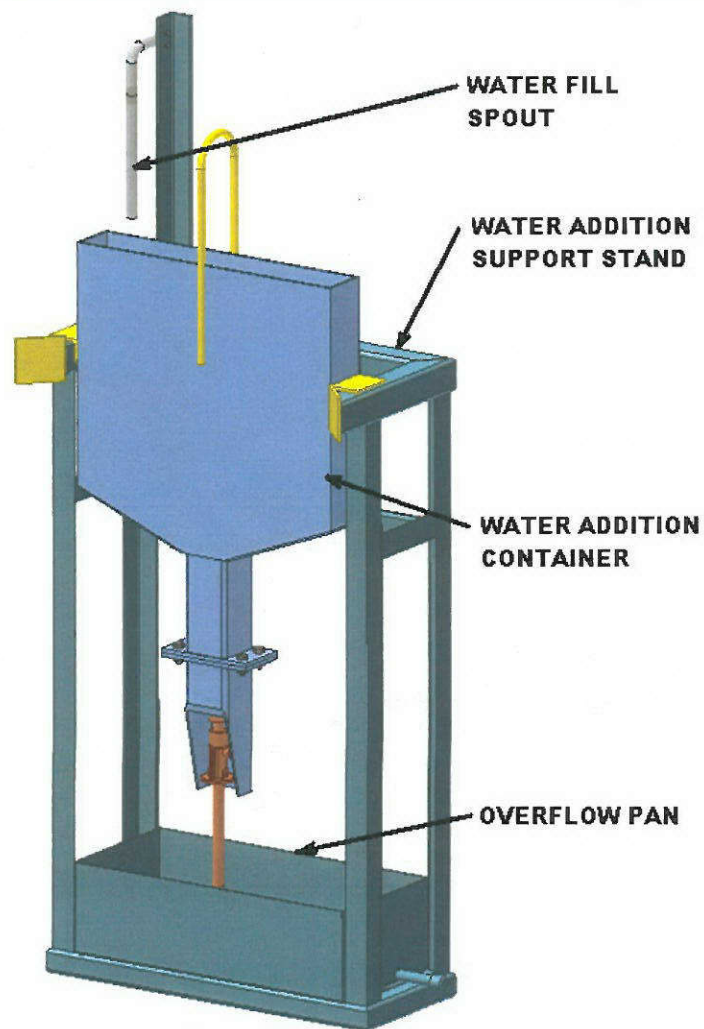


Modified Storage Cell Configuration (Actual for LDC)

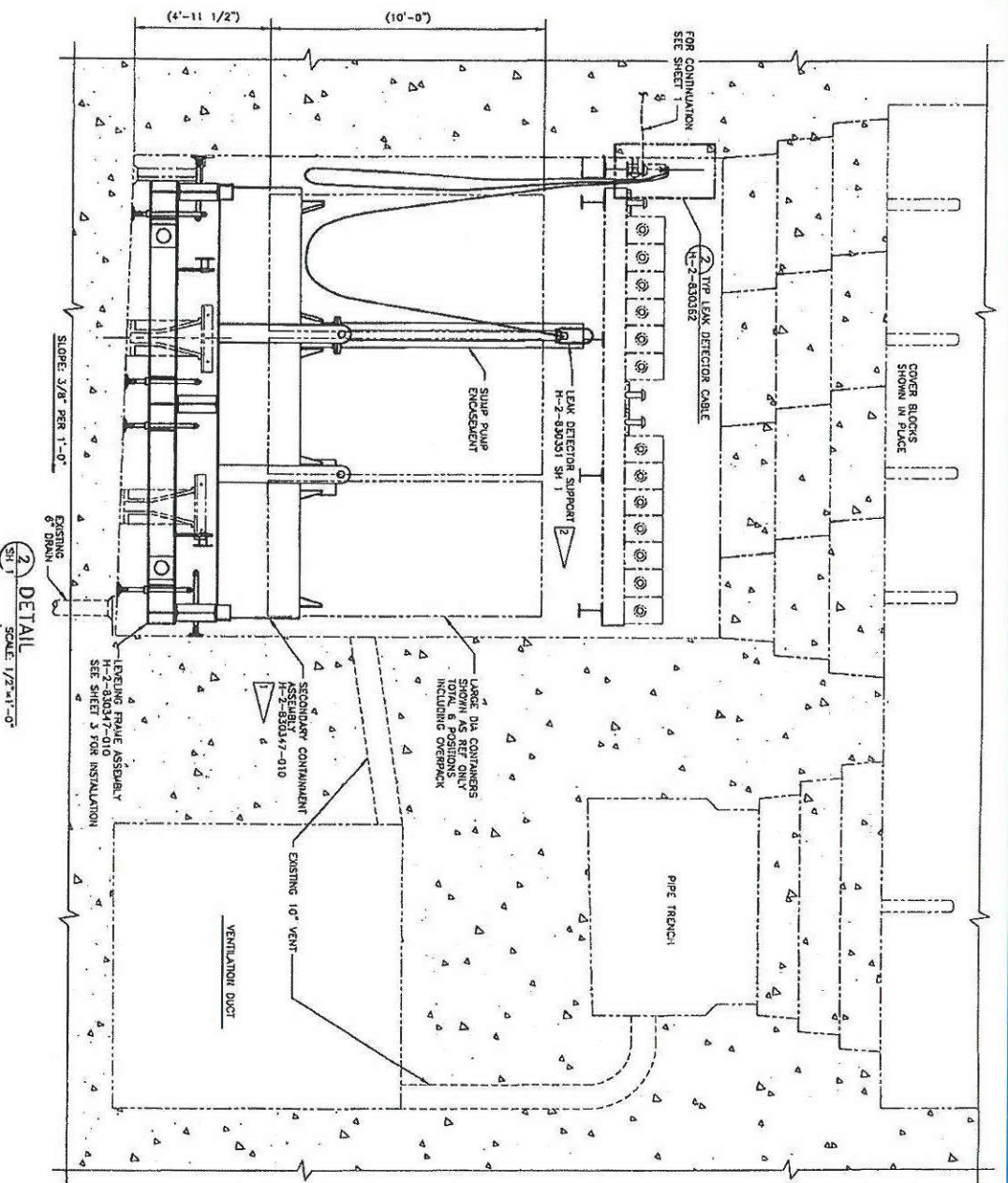


CP-59725-VA Rev. 0

Water Addition Container & Storage Rack on Deck



Cross Section of Cell Ventilation



2 DETAIL
SH 1
SCALE 1/2"=1'-0"

EPA and Ecology Consensus Regulatory Approach

- June 24, 2015 Letter from EPA:
 - Revised TPA Milestones for sludge retrieval. Modify the K Basins Record of Decision to provide for long term storage and delayed treatment consistent with the revised milestones. (An ESD is being prepared and will provide for a public review period. The ESD will make the T Plant cells for sludge storage part of the onsite area for the ROD and will identify 40 CFR 761 standards for safe storage).
- July 23, 2015 Letter from Ecology:
 - Activities to prepare T Plant for receipt of sludge do not require a permit modification for T Plant.

Questions?



Waste Disposition Performance

Facility	Status as of 1-26-2016
CWC	<ul style="list-style-type: none"> • Reconciling data between SWITS and the OR for 750 containers; updating their labeling as needed • Performing waste storage & inspection activities • Mining, segregating, and overpacking watch list drums is ongoing, as needed • Continuing to receive waste from onsite and offsite generators • Ship large boxes from OSA "A" to PFNW as authorized by DOE • Newly identified roof and floor deficiencies are being tracked and will be repaired in FY2016 • Emergency light testing & repairs: 2403-W series buildings lighting upgrades expected to begin March 2016 • Conducted Fire Suppression System testing & inspection with HFD • Newly identified box cover deficiencies will be tracked and repaired in FY2016
LLBG	<ul style="list-style-type: none"> • Continuing to perform inspection activities in LLBGs • Continuing housekeeping activities in LLBGs* • Continuing receipt of waste shipments at Trench 31/34 • Continuing leachate collection & removal system operation at Trenches 31 & 34
WRAP	<ul style="list-style-type: none"> • Newly identified roof deficiencies are being tracked and will be repaired in FY2016 • Continuing min-safe surveillance and maintenance activities. • Continuing floor maintenance activities at 2404-WB when resources & weather permit. No mixed waste containers with free liquids will be stored in this building without replacement secondary containment until the floor is repaired. • Conducted Fire Suppression System testing & inspection with HFD • Continue to receive PFP waste containers into 2404-WC
T Plant	<ul style="list-style-type: none"> • Continuing surveillance and maintenance activities. • PMs, including Canyon Crane rail hold clip repairs • Canyon Crane operator training has begun and will continue
* Housekeeping in LLBGs includes tumbleweed monitoring & removal, control of vegetation growth, contamination control activities	

RCRA-Regulated Inventory

of Containers/Tanks and Volume

as of 1-26-2016

Facility	Drum/Small Container ¹	Medium Container ²	Large Container ³	Total Volume
CWC (Dec)	5532 (1340 m ³)	580 (1004 m ³)	373 (6217 m ³)	8,561 m ³
CWC (Jan)	5532 (1340 m ³)	587 (1016 m ³)	372 (6185 m ³)	8,541 m ³
T-Plant (Dec)	6 (1 m ³)	0 (0 m ³)	8 (303 m ³)*	304 m ³ *
T-Plant (Jan)	6 (1 m ³)	0 (0 m ³)	8 (303 m ³)*	304 m ³ *
WRAP (Dec)	30 (6 m ³)	0 (0 m ³)	0 (0 m ³)	6 m ³
WRAP (Jan)	31 (7 m ³)	0 (0 m ³)	0 (0 m ³)	7 m ³

Footnotes regarding volumes:

* Inventory is for containers except for six (6) large tanks at T-Plant with a volume of 259 m³

1. 0.485 m³ (110 gallons; 17.1 ft³) or less

2. Greater than 0.485 m³ (110 gallons; 17.1 ft³) & less than 1.812 m³ (64ft³) (Standard Waste Box)

3. Greater than 1.812 m³

Waste Package Inventory in CWC Outside Storage Areas

CWC DWMU ^[1]	Number of Waste Packages in storage (1/24/2014)	Number of Waste Packages in storage (12/7/2015)	Number of Waste Packages in storage (1/26/2016)	Notes/Comments in Inventory Change from Previous Month
Outside Storage Area A	173	153	152	One waste container to PFNW on 12/15/2015
Outside Storage Area B	11	11	11	
D-10 Outside Storage Area	1	1	1	
East Outside Storage Area	0	0	0	
Shipping and Receiving Area	0	0	0	
Total =	185	165	164	

[1] DWMUs are based on those listed in the Agreed Order, exhibit B.

T PLANT, LLBG, WRAP, AND CWC
Project Managers Meeting
825 Jadwin / Room 540S
Hanford, Washington

January 28, 2016

ATTENDEE LIST

Name	Organization	Phone Number
1. Rick Engelman	CHPRC	376-7485
2. John Temple	Ecology	372-7940
3. Deborah Singleton	Ecology	372-7923
4. Michael Collins	Don	376-6536
5. Michael Turner	MSA	376-2872
6. Sasa Kosjerina	CHPRC	373-9624
7. Stephanie Johansen	CHPRC	373-1031
8. Kathy Knox	Knox Court Reporting	946-5535
9. Linda Petersen	CHPRC - SWOC	373-4200
10. JV Borghese	CHPRC	
11. Stuart Luttrell	Ecology	372-7883
12. Joel Williams J.	CHPRC	376-4182
13. [Signature]	CHPRC	373-6024
14. P. Sharon BADBADA	CHPRC EPSP	373-9792
15. Brian Dixon	CHPRC	376-7053
16.		
17.		
18.		
19.		
20.		
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25.		

T PLANT, LLBG, WRAP, AND CWC PROJECT MEETING
825 Jadwin / Room 540S
Hanford, Washington
January 28, 2016

10:00 A.M. to 11:00 A.M.

Agenda

- I. The September 24, 2015, Project Managers Meeting (PMM) Minutes are submitted to the Administrative Record (AR). The December 10, 2015, PMM minutes are in review by RL and Ecology representatives and will be submitted to the AR after signature approved by representatives.
- II. Operational Status
- III. Status of Previous Agreements and Commitments
- IV. New Agreements and Commitments
- V. Near Term Schedules and Ongoing Activities
 - A. Agreed Order – Implementation
 - B. CAFO
 - C. HF RCRA Permit Rev. 9 Update
 - D. 8C updates, closure plans, Part B application
 - E. Conceptual Agreement Packages
 - F. Sludge Storage at T Plant
- VI. Approved Changes Signed Off in Accordance with TPA Section 12.2
- VII. General Discussion
- VIII. Actions

Unit	Description of Action	Status	Date
T-Plant – Sludge Storage	Mr. Collins to set up a presentation by the K Basin Operations on sludge storage at T-Plant during the October 22, 2015 PMM Meeting.	New	9/24/15
		Presentation will be given at the 1/28/16 PMM	12/10/15
- IX. Documents for Submittal to the Administrative Record
- X. Next Project Managers Meeting